MPE-PNTM System Board

BIOS User's Guide

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PREFACE

Thank you for your choice of a Mylex MPE-PNTM System Board product. With proper installation and care, your Mylex System Board will operate for years without any service requirement. This Installation and Operation Guide will guide you in the installation process. The information contained herein is subject to change without notice.

BIOS Modifications

For information on Mylex's modifications to the AMIBIOS, please refer to the "Appendix A" section of this manual.

Hardware

The MPE-PNTM motherboard uses the NCR53C810 PCI SCSI chip to interface with standard/fast SCSI drives. The NCR53C810 resides on the PCI bus allowing high-speed transfers from the SCSI drives.

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Chapter 1: Introduction

This manual documents the AMIBIOS for the Intel Mercury Chipset with SMC FCD637C665 support, designed for a Pentium-based EISA computer system with an SMC FDC637C665 Super I/O Controller. This AMIBIOS also supports the NCR SCSI 810 chip on the PCI local bus.

There is no generic AMIBIOS for the Intel Mercury chipset. Because of the complex issues involving this chipset, the AMIBIOS must be customized for each system based on the Mercury chipset.

This manual describes both the AMIBCP options that may be used by the system integrator to configure this BIOS and the AMIBIOS Setup utility that is one of the outputs when the AMIBIOS ROM files described in this manual are used with the American Megatrends AMIBCP BIOS Configuration Program.

This AMIBIOS also supports the Intel PCI (Peripheral Component Interconnect) local bus specification.

This AMIBIOS includes support for:

- The SMC FCD637C665 Super I/O Controller
- The NCR 53C810 PCI SCSI BIOS V1.07
- The Weitek 5816 Video BIOS v1.50.

Please see the Intel, NCR, ATI, Weitek, and SMC technical documentation for additional information.

System BIOS

The BIOS is the basic input output system used in all IBM@ PC-, XT™-, AT®-, and PS/2®- compatible computers. The AMIBIOS is a high-quality example of a system BIOS.

Configuration Data

AT-Compatible systems, also called ISA (Industry Standard Architecture) must have a place to store system information when the computer is turned off. The original IBM AT had 84 bytes of non-volatile memory storage in CMOS RAM. All AT-Compatible systems have at least 84 bytes of CMOS RAM, which is usually part of the Real Time Clock. Many systems have 128 bytes of CMOS RAM.

How Data Is Configured

AMIBIOS provides a Setup utility in ROM that is accessed by pressing <Del> at the appropriate time during system boot. Setup configures data in CMOS RAM.

The AMIBIOS Setup utility included in the AMIBIOS for the Intel Mercury Chipset can also be executed via a hot key.

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Types of **AMIBIOS** Setup

SETUP	DESCRIPTION
Standard SETUP	Sets time, date, hard disk type, types of floppy drives, monitor types, and if keyboard is installed.
Advanced SETUP	Sets Typematic Rate and Delay, Above 1MB Memory Test, memory Test Tick Sound, Hit <Del> Message Display, System Boot Up Sequence, and many others.
Chipset SETUP	Sets chipset-specific options and features.
Peripheral SETUP	Controls I/O Controller-related options.
Power Management SETUP	Controls power conservation options.

UTILITY	DESCRIPTION
Detect C	Autodetect IDE Drive
Detect D	Autodetect IDE Drive
Colorset	Allows you to change the BIOS Setup screen colors.

SECURITY	DESCRIPTION
Password	Allows you to enter a user-selected password that will enable this option.
Antivirus	Enable/Disable antivirus protection.

DEFAULT	DESCRIPTION
Original	For default values.
Optimal	For best performance.
Fail Safe	For safest default values

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Chapter 2: PCI Local Bus

PCI is a specification for a local bus standard. The PCI specification also provides the electrical specifications for peripheral chip makers and the logic requirements for a PCI Controller. While PCI defines a local bus standard, it also defines a standard component-level interface. PCI is a common I/O component interface.

The PCI Local Bus Specification is a standard set of interface, architecture, timings, electrical, and physical specifications that permits all PCI Local Bus products to be totally interchangeable.

PCI is a multiplexed extension of the CPU bus. In PCI, the CPU bus control mechanisms have been extended to optimize I/O support.

PCI establishes a local bus standard in which a large variety of I/O components can be directly connected without using any glue logic.

What PCI Accomplishes

PCI is a way to physically interconnect highly integrated peripheral components and processor/memory systems.

PCI Features

Up to ten PCI loads can be used in the same system on the PCI bus, including the PCI Controller and an expansion bus controller for EISA, ISA, or MCA. PCI decouples the CPU from the expansion bus and works

at 33 MHz but can use either a 32-bit or 64-bit data connection path to the CPU.

Other PCI Features

- Processor-independent,
- Has a multiplexed address, command, and data bus and supports burst mode operation on reads and wriies,
- Runs synchronous with the CPU at speeds up to 33 MHz,
- Has a maximum data transfer rate of 120 MBs (with a peak rate of 132 MBs on a 32-bit data path),
- Has a maximum data transfer rate of 240 MBs (with a peak rate of 264 MBs on a 64-bit data path),
- Has an optional 64-bit data path that is transparently interoperable with the 32-bit data path,
- Has low latency random accesses (about 60 ns write access latency) to slave registers from a PCI bus master on the PCI bus,
- Is capable of full concurrency with the processor and PCI bus masters,
- Has full multimaster capability, allowing any PCI Master peer-to-peer access to any PCI slave,
- Has hidden and overlapped central arbitration,
- Has a low pin count (master - 47; slave - 45),
- Has address and data parity, and
- Uses three physical address spaces: 32-bit memory, 32-bit I/O, and a 256 byte-per-agent configuration space.

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Buffered Reads and Writes

The PCI Controller buffers reads and writes between the memory/CPU and PCI peripheral devices.

Concurrent Operation

The CPU in a PCI system runs concurrently with PCI bus mastering peripherals. Although bus mastering peripheral devices are arbitrated, significant data transfer rate improvements can be achieved without splitting resource utilization between the CPU and a bus mastering device. Peripheral devices can operate at up to 33 MHz in a PCI environment.

Bus Mastering

PCI devices can be bus masters, slaves, or a combination of bus master and slave.

Burst Mode

The PCI specification also provides for burst mode of any length for both reads and writes.

Multiplexing

PCI is a multiplexed bus. Multiplexing allows more than one signal to be sent on the same electrical path.

The control mechanisms have been modified and extended to optimize I/O support.

PCI Component Classes

PCI components must be one of three classes:

- Bus master,
- Slave, or
- Master/slave combination.

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Chapter 3: Standard SETUP

The AMIBIOS Setup options described in this section are selected by choosing the appropriate high-level icon from the Standard Setup screen. Standard Setup is selected from the Setup section on the AMIBIOS Setup main menu (see the previous page). All displayed icons are described in this section, although the screen display is often all you need to understand how to set the option.

Date, Day and Time Configuration

Select the Standard option. Select the Date and Time icon. The current values for each category are displayed. Enter new values through the keyboard.

Hard Disk C: Type/Hard Disk D: Type

Select one of these hard disk drive icons to configure the drive named in the option. A scrollable screen that lists all valid disk drive types is displayed. Select the correct type and press **<Enter>**. If the hard disk drive is an IDE drive, select Detect C: or Detect D: from the Utility section of the AMIBIOS Setup main menu to have AMIBIOS automatically detect the IDE drive parameters and report them to this screen.

Entering Drive Parameters

You can also enter the hard disk drive parameters. The drive parameters are:

PARAMETER	DESCRIPTION
Type	The number for a drive with certain identification parameters.
Cylinders	The number of cylinders in the disk drive.
Heads	The number of heads.
Write Precompensation	This size of a sector gets progressively smaller as the rack diameter diminishes. Yet each sector must still hold 512 bytes. Wriie precomensation circuitry on the hard disk compensates for the physical difference in sector size by boosting the write current for sectors on inner tracks. This parameter is the track number where write precomensation begins.
Landing Zone	The number os the cylinder location where the heads will normally park when the system is shut down.
Sectors	The number of sectors per track. MFM drives have 17 sectors per track. RLL drives have 26 sectors per track. ESDI drives have 34 sectors per track. SCSI and IDE drives may have even more sectors per track.

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Capacity	The formatted capacity of the drive is (Number of heads) x (Number of cylinders) x (Number of sectors per track) x (512 bytes per sector).

Hard Disk Drive Types

Type	Cylinder	Heads	Write Precompensation	Landing Zone	Sectors	Capacity
Not Installed						
1	306	4	128	305	17	10MB
2	615	4	300	615	17	20MB
3	615	6	300	615	17	31MB
4	940	8	512	940	17	62MB
5	940	6	512	940	17	47MB
6	615	4	65535	615	17	20MB
7	462	8	256	511	17	31MB
8	733	5	65535	733	17	30MB
9	900	15	65535	901	17	112MB
10	820	3	65535	820	17	20MB
11	855	5	65535	855	17	35MB
12	855	7	65535	855	17	50MB
13	306	8	128	319	17	20MB
14	733	7	65535	733	17	43MB

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16	612	4	0	663	17	20MB
17	977	5	300	977	17	41MB
18	977	7	65535	977	17	57MB
19	1024	7	512	1023	17	60MB
20	733	5	300	732	17	30MB
21	733	7	300	732	17	43MB
22	733	5	300	733	17	30MB
23	306	4	0	336	17	10MB
24	925	7	0	925	17	54MB
25	925	9	65535	925	17	69MB
26	754	7	754	754	17	44MB
27	754	11	65535	754	17	69MB
28	699	7	256	699	17	41MB
29	823	10	65535	823	17	68MB
30	918	7	918	918	17	53MB
31	1024	11	65535	1024	17	94MB
32	1024	15	65535	1024	17	128MB
33	1024	5	1024	1024	17	43MB
34	612	2	128	612	17	10MB
35	1024	9	65535	1024	17	77MB
36	1024	8	512	1024	17	68MB
37	615	8	128	615	17	41MB
38	987	3	987	987	17	25MB

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39	987	7	987	987	17	57MB
40	820	6	820	820	17	41MB
41	977	5	977	977	17	41MB
42	981	5	981	981	17	41MB
43	830	7	512	830	17	48MB
44	830	10	65535	830	17	69MB
45	917	15	65585	918	17	114MB
46	1224	15	65585	1223	17	152MB
47	USER-DEFINED HARD DRIVE -- ENTER USER-SUPPLIED PARAMETERS.					
ESDI						
SCSI						

Using Auto Detect Hard Disk (Only for IDE Drives)

If you select Detect C: or Detect D: from the Utility section of the AMIBIOS Setup main menu, AMIBIOS automatically finds all IDE hard disk drive parameters. AMIBIOS places the hard disk drive parameters that it finds in the Drive C: Type or Drive D: Type fields in Standard Setup.

Floppy Drive A:/Floppy Drive B:

Move the cursor to these fields via and and select the floppy type. The settings are 360 *KB 5¼* inch, 7.2 *MB 5¼ inch, 720 KB 3½ inch, 1.44 MB 3½ inch,* or 2.88 *MB 3½ inch.*

Chapter 4: Advanced SETUP

The Advanced Setup options that will be included in the AMIBIOS Setup generated through AMIBCP and the AMIBIOS for the Intel Mercury chipset with SMC 665 support are described in this chapter.

Although these options are described in the *American Megafrends AMIBIOS User's Guide for the 12/15/93 core AMIBIOS,* they are also described in this manual, since AMIBIOS is new and unfamiliar to most American megatrends clients.

Default Settings

Every option in AMIBIOS Setup contains two default values: an Fail-Safe default and the Optimal default value.

Optimal Defaults

The Optimal default values provide optimum performance settings for all devices and system features.

Fail-Safe Defaults

The Fail-Safe default settings consist of the safest set of parameters. Use them if the system is behaving erratically. They should always work but do not provide optimal system performance characteristics.

Advanced Setup Options

Typematic Rate (Chars/Sec)

This option sets the rate at which characters displayed on the screen repeat when a key is pressed and held down. The settings are *Disabled, 15, 20,* or *30* characters per second. The Optimal default setting is *30 cps. The* Fail-Safe default setting is *Disabled.*

Mouse Support

When this option is set to *Enabled,* AMIBIOS supports a PS/2-type mouse. The settings are *Enabled* or *Disabled.* The Optimal default setting is *Enabled.* The Fail-Safe default setting is *Disabled.*

Use *Disabled* if a PS/2 mouse is not being used.

Above 1 MB Memory Test

When this option is set to *Enabled,* the AMIBIOS memory test is performed on all system memory. When this option is set to *Disabled,* the memory test is done only on the first 1 MB of system memory. The settings are *Enabled* or *Disabled.* The Optimal default and Fail-Safe default settings are *Disabled.*

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Memotv Test Tick Sound

This option enables (turns on) or disables (turns off) the ticking sound during the memory test. The settings are Enabled or *Disabled.* The Optimal defautt and Fail-Safe default settings are Enabled.

Paritv Error Check

This option enables or disables parity error checking for system RAM. The settings are *Enabled* (all system RAM parity is checked) or *Disabled* (parity is checked only on the first 1 MB of system RAM). The Optimal defautt and Fail-Safe defautt settings are *Disabled.*

Hit "DEL" Message Display

Disabling this option prevents

Hit <Del> if you want to run Setup

from appearing when the system boots. The settings are *Enabled* or *Disabled.* The Optimal default and Fail-Safe default settings are *Enabled.*

Extended BIOS RAM Area

Specify in this option if the top 1 KB of the system programming area beginning at 639K (DOS *1K)* or address *0:300* in the AMIBIOS area in low memory will be used to store extended BIOS RAM information. The settings are DOS *1K* or *0:300.* The Optimal default and Fail-Safe default settings are *0:300.*

For extended BIOS RAM area, set this option to 0:300.

Wait for "F1" If Any Error

AMIBIOS POST runs system diagnostic tests that can generate a message followed by:

Press <F1> to continue

If this option is set to *Enabled,* AMIBIOS waits for the end user to press before continuing. If this option is set to *Disabled,* AMIBIOS continues the boot process without waiting for to be pressed. The settings are *Enabled* or *Disabled.* The Optimal default and Fail-Safe default settings are *Enabled.*

System Boot Up Num Lock

When this option is set to *On,* AMIBIOS turns off *Num Lock* when the system is powered on so the end user can use the arrow keys on both the numeric keypad and the keyboard. The settings are *On* or *Off.* The Optimal default and Fail-Safe default settings are *On.*

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Floppy Drive Seek At Boot

When this option is set to Enabled, **AMIBIOS** performs **a** Seek command on floppy drive A: before booting the system. The settings are Enabled or *Disabled.* The Optimal default and Fail-Safe default settings are *Disabled.*

System Boot Up Sequence

This option sets the sequence of boot drives (either floppy drive A: or hard disk drive C:) that AMIBIOS attempts to boot from after AMIBIOS POST completes. The settings are *C:,A:* or *A:,C:*. The Optimal default setting is *C:,A:*. The Fail-Safe default setting is *A:, C:.*

Cache Memory

This option enables internal (on the microprocessor) and secondary (external) cache memory. If Both is selected, internal cache and external cache memory is enabled. If *Internal* is chosen, only the internal cache memory in the Pentium CPU is enabled. If *Disabled* is chosen, all cache memory is disabled. The settings are *Internal, Disabled,* or Both. The Optimal default setting is Both. The Fail-Safe default setting is *Disabled.*

External Cache Mode

This option selects the type of caching algorithm used by **AMIBIOS** and the computer for L2 (external) secondary cache memory. The settings are ***Wr-Thru*** or ***Wr-Back***. The Optimal default setting is ***Wr-Back***. The Fail-Safe default setting is ***Wr-Thru.***

Adapter Shadow Cacheable

Once any Adapter BIOS is shadowed in RAM, using the ISA Adapter ROM options, this option could be used to cache the shadow RAM. Enable this option only if all the adapters that have ROM shadowed, work properly with this option disabled. If enabling this option results in problems, immediately disable this. If all the Adapter BIOS ROMs are not shadowed, leave this option as disabled.

System BIOS Shadow Cacheable

If enabled, this option will make the BIOS area **E000:0** to FFFF:F cachable. Disable this only for a fail safe operation.

Password Checking

This option is only valid if the password is defined under security. Options are *Setup* or *Always. Setup* will only check the password when entering into CMOS setup. *Always* will check the password when booting.

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ISA Video ROM C000, 32K

When this option is set to Enabled, the video ROM area from C0000h - C7FFFh is copied (shadowed) from ROM to RAM for faster execution. The settings are *Absent, Present,* or *Shadow.*

- **ISA Adapter ROM C800,16K**
- **ISA Adapter ROM CC00,16K**
- **ISA Adapter ROM D000,16K**
- **ISA Adapter ROM D400,16K**
- **ISA Adapter ROM D800,16K**

These options enable shadowing of the contents of the ROM area beginning at the address named in the option title (for example, the **Shadow C800, 16K option** can enable shadowing of the contents of the ROM area from C8000h - CBFFFh to RAM. The settings are *Absent, Present,* or *Shadow.* The ROM area that is not used by ISA adapter cards will be allocated to PCI adapter cards.

If no ISA adapter ROM exists at the location, make sure the option is marked as *Absent, so* that the PCI boards can be automatically configured to use these ROM areas.

If the option is set to Present, it means there is an ISA adapter ROM present in this address and the ISA adapter ROM will not be shadowed and this address can not be used for PCI option ROM. If the option is set to *Shadow, it* means there is a ISA adapter ROM present in this address and ISA adapter ROM will be shadowed. Therefore, this address cannot be used for PCI option ROM.

IDE Block Mode

This option enables multiple sector reads and writes for IDE drives. The settings are *Enabled* or Disabled. The Optimal default setting is *Disabled.* The Fail-Safe defautt setting is *Enabled.*

WARNING!

Do not enable this option if the IDE hard disk does not support block mode. File corruption will result.

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Chapter 5: Chipset Setup

Base Memory Size

This option sets the size of the base system memory. The settings are 512 *KB* or 640 *KB.* The Optimal and Fail-Safe default settings are 640 *KB*.

Host-To-Host Memory Posting

The settings are Enabled or Disabled. The Optimal and Fail-Safe default settings are *Disabled.*

WARNING!

If any bus mastering boards are in the system, the host-to-host memory posting must be set to disabled.

Host-To-PCI Posting

Enable this option for better performance.

PCI-To-Memory Posting

The settings are *Enabled* or *Disabled.* The Optimal and Fail-Safe default settings are *Disabled.*

Enable this option for better performance.

DRAM Speed

This option specifies the type of DRAM system memory used in this computer. The settings are Slow or Fast. The Optimal and Fail-Safe default settings are Slow.

WARNING!

This **setting is a future option. Do not enable.**

ISA VGA Frame Buffer Size

This option must be set to Enabled if the VGA adapter card installed in the system requires a frame buffer. This option sets the size of the VGA frame buffer. The settings are Disabled, *1* MB, 2 *MB,* or 4 *MB.* The Optimal and Fail-Safe default settings are *Disabled.*

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ISA VGA Frame Buffer Base Address (Memory Hole)

This option sets the base address (or starting point) of the VGA frame buffer. This option must be set to Enabled if the VGA card installed in the system requires a frame buffer. The settings are dependent on the setting of the *ISA VGA Frame Buffer Size* option as shown in the following **table.Also** see the table to create a memory hole below 16MB.

If the ISA VGA Frame Buffer Size option is set to...	then the ISA VGA Frame Buffer Address option will automatically be set to the following by AMIBIOS...
Disabled	N/A
1MB	15MB - 16MB
2MB	14MB - 16MB
4MB	12MB - 16MB

The Optimal and Fail-Safe default settings are *(N/A)*.

ISA IRQ 9

IRQ x: Four setup options are available for PCI IRQs; i.e., the IRQs that can be assigned to PCI devices. They are IRQ9, IRQ10, IRQ11, and IRQ15. The setup option for each IRQ is either 'ISA' or 'PCI'. When set to 'ISA', the designated IRQ is not available for PCI devices and. If set to 'PCI', the designated IRQ will be available for PCI devices.

The IRQs that are available for PCI devices are allocated in the following manner,

First, all available IRQs are allocated to the PCI devices so that the interrupt does not have to share. If there are no more available IRQ numbers, then an already-used IRQ will be allocated, in which case that IRQ must be sharable. For example, if two PCI cards are present and if IRQ9, IRQ10, and IRQ11 are available for PCI, then the on-board SCSI PCI card in slot land the PCI card in slot 2 each will be allocated a unique IRQ. But if only two IRQsare available, such as IRQ9 and IRQ11, then IRQ9 must be sharable.

The on-board SCSI port in the Pentium Motherboard actually sits on the PCI bus, without taking up any PCI slots.

Note: The on-board SCSI port, enabled through the on-board PCI SCSI device option, will consume an interrupt. Hence, if the on-board SCSI port is enabled, make sure an IRQ is made available to it, by assigning it to PCI. IRQ9 should be set to ISA.

PCI IRQ: Set to Level normally. This setting also allows sharing of PCI interrupts. Make sure all the PCI cards can operate with the setting defined here.

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At least one IRQ must be free for each PCI adapter card in the system. If the PCI adapter card includes a multifunction device, at least two or more IRQs must be free. The settings are Free or Used. The Optimal and Fail-Safe default settings are Free.

WARNING!

Set IRQ9 to ISA when using the on-board NCR SCSI.

ISA IRQ 10

At least one IRQ must be free for each PCI adapter card in the system. If the PCI adapter card includes a multifunction device, at least two or more IRQs must be free. This option specifies if IRQ 10 is used in ISA. The settings are Free or Used. The Optimal and Fail-Safe default settings are Free.

ISA IRQ 11

At least one IRQ must be free for each PCI adapter card in the system. If the PCI adapter card includes a multifunction device, at least two or more IRQs must be free. This option specifies if IRQ 11 is used in ISA. The settings are Free or Used. The Optimal and Fail-Safe default settings are Used.

ISA IRQ 15

At least one IRQ must be free for each ISA adapter card in the system. If the PCI adapter card includes a multifunction device, at least two or more IRQs must be free. This option specifies if IRQ 15 is used in ISA. The settings are Free or Used. The Optimal and Fail-Safe default settings are Free.

PCI VGA Palette Snooping

This option must be set to *Enabled* if any ISA adapter card installed in the system requires VGA palette snooping. The settings are *Enabled* or *Disabled.* The Optimal and Fail-Safe default settings are *Disabled.*

On-Board PCI SCSI Controller

Set this option to *Enabled* to use the PCI Controller on the motherboard. The settings are *Enabled* or *Disabled.* The Optimal default setting is *Enabled.* The Fail-Safe default setting is *Disabled.*

PCI SCSI BIOS

Set this option to *Enabled* to enable the PCI SCSI BIOS. The settings are *Enabled* or *Disabled.* The Optimal default setting is *Enabled.* The Fail-Safe default setting is *Disabled.*

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PCI IDE Card Present In

The default is *Absent.* The motherboard contains an on-board IDE interface. However, if a PCI IDE expansion card is plugged in, this option will have to be set.

The above option supports the PCI IDE cards (which are not truly PCI compliant). The PCI IDE card's slot number needs to be specified for this purpose. The examples given below explain all the possible options.

- If a PCI IDE card without any configuration space (so there is no means by which BIOS can identify this card as PCI card) is used, BIOS will assume that I/O ports 1 FO-IF7, I/O Ports 3F6-3F7 and IRQ14 are used by this card. The PCI IDE card's slot number needs to be specified for such a card.

- If a PCI IDE card with a READ ONLY configuration space (so BIOS can see this card as PCI card but can't program the configuration space), BIOS will assume that I/O ports 1 FO-1 F7, I/O Ports 3F6-3F7 and IRQ14 are used by this card. In this case, user NEED NOT specify the presence of the card in setup since it can be identified by BIOS as PCI IDE card.

- For a true PCI IDE card without option ROM, BIOS will allocate I/O ports 1 FO-1 F7, I/O Ports 3F6-3F7 and IRQ14 to this card. The PCI IDE card's slot number needs to be specified for such a card.

For a true PCI IDE card with an option ROM, BIOS will automatically configure the IDE card as a true PCI device assuming the option ROM is capable of handling allocated resources properly. and IRQ14 are used by this card. The PCI IDE card's slot number needs to be specified for such a card.

This option specifies which PCI expansion slot the on-board IDE controller is attached to. The settings are *Absent, Slot 1, Slot* 2, Slot 3. The Optimal and Fail-Safe default settings are *Absent.*

PCI IDE IRQ Connect To

This option specifies the interrupts used by the on-board PCI IDE controller connected to one of the available IRQs. Settings are *INT A (10), INT B (11), INT C (12), INT D (13).*

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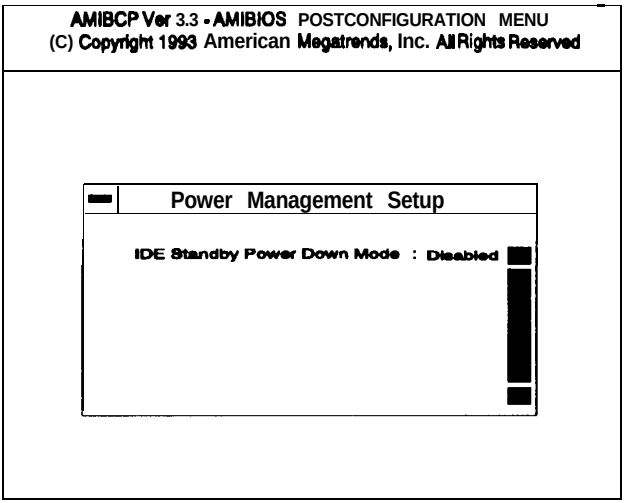
Chapter 6: Power Management SETUP

The WinBIOS Setup options described in this section are selected by choosing the appropriate option from the Power Mgmt Setup screen. Power Mgmt Setup is selected from the Setup section on the WinBIOS Setup main menu. All options are described in this section. A sample Power Management Setup screen is shown below.



IDE Standby Power Down Mode

This option specifies the length of time of hard disk drive inactivity that must expire before the IDE hard disk drive is placed in IDE Standby Power Down Mode. The settings are *Enabled* or *Disabled.* The Optimal and Fail-Safe default settings are *Disabled.*

Chapter 7: Peripheral Setup

The WinBIOS Setup options described in this section are selected by choosing the option from the Peripheral Setup screen. Peripheral Setup is selected from the Setup section on the WinBIOS Setup main menu.

Programming Mode

The settings are *Auto* or *Manual.* When set to *Auto,* WinBIOS automatically detects all adapter cards installed in the system and configures the onboard I/O (serial ports, parallel ports, floppy controllers, and IDE controller) automatically. All other Peripheral Setup option settings are ignored. Any serial port, parallel port, floppy controller, or IDE (Integrated Drive Electronics) controller on an adapter card in an expansion slot is configured before onboard I/O. If *Auto* is selected, WinBIOS also attempts to avoid IRQ conflicts. If the offboard serial ports are configured to specific starting I/O ports via jumper settings, WinBIOS configures the onboard serial ports to avoid conflicts. For example, if the default serial port starting I/O ports (serial port1 - 3F8h, serial port2 - 2F8h, serial port3 - 3E8h, serial port4 - 2E8h) are, the following configurations are possible:

If there are...	the ports are...	the on-board serial ports are...
two off -board serial ports	3E8h and 2F8h	3E8h and 2E8h
two off-board serial ports	3F8h and 3E8h	3F8h and Disabled

one off-board serial port	2F8h	3F8h and Disabled
one off-board serial port	3F8h	2F8h Disabled

If *Manual* is selected, the settings chosen by the end user in Peripheral Setup apply. WinBIOS reports any I/O conflicts after displaying the BIOS Configuration Summary Screen, but only if *Manual* is chosen. The Optimal and Fail-Safe default settings are Auto.

On-Board FDC

This option enables the use of the FDC (Floppy Drive Controller) on the motherboard (if installed). The settings are *Enabled* or *Disabled.* The Optimal and Fail-Safe default settings are *Disabled.*

On-Board IDE Drive

This option enables the use of the IDE controller on the motherboard (if installed). The settings are *Enabled* or *Disabled.* The Optimal and Fail-Safe default settings are *Disabled.*

Serial Port 1

This option enables serial port 1 on the motherboard (if installed). The settings are *2E8h.* The Optimal and Fail-Safe defaults are *3F8h.*

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Serial Port 2

This option enables serial port 2 on the motherboard, if installed. The settings are *2F8h*. The Optimal and Fail-Safe default settings are *2F8h.*

Parallel Port

This option enables the parallel port on the motherboard, if installed. The settings are *378h.* The Optimal and Fail-Safe default settings are *378h.*

IRQ Active State

This option specifies if the parallel and serial port IRQs are active high or active low. The settings are *Low* or *High.* The Optimal and Fail-Safe default settings are *High.*

Parallel Port Mode

This option specifies the parallel port mode. The settings are *Norma/* or *Extended.* The Optimal and Fail-Safe default settings are *Normal.*